The present work investigates the micromechanics approaches to model the thermomechanical behaviours of shape memory alloy composites. The research is primarily focussed on modelling the pseudoelastic and shape memory behaviours of smart composites, which are inherent in multifunctional materials like shape memory alloys and polymers. In the study, non- adaptive and adaptive matrix materials are used to address the adaptive fibre non-adaptive matrix, and adaptive fibre adaptive matrix concepts, respectively. Nickel-Titanium shape memory alloy wire is used as an adaptive shape memory fibre. Similarly, epoxy matrix that does not exhibit shape memory behaviours is considered as non-adaptive, while matrix possessing such behaviours has been employed as an adaptive matrix. The importance of the present research is to develop the modelling procedures for shape memory composites useful in high performance applications. The first and the foremost requirements are to propose the constitutive relations, which should be simpler in computation and at the same time address the fundamental mechanics of constituent materials. Therefore, simple analytical approaches are streamlined and the exist

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Adaptive Shape Memory Composites

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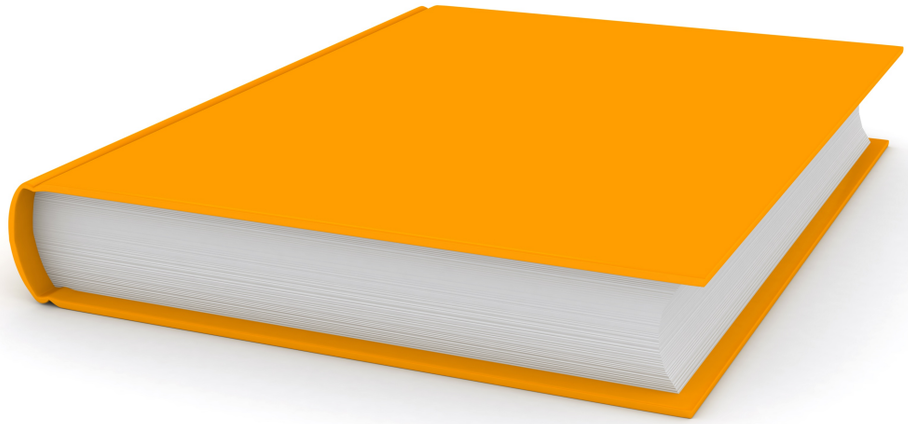

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Micromechanics and Modelling of Adaptive Shape Memory Composites

Micromechanics and Modelling of High Performance Adaptive Shape Memory Composites With Multifunctional materials

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